

Product Overview

FCP125N65S3R0: Power MOSFET, N-Channel, SUPERFET® III, Easy Drive, 650 V, 24 A, 125 mΩ , TO-220

For complete documentation, see the data sheet.

SUPERFET III MOSFET is ON Semiconductor's brand-new high voltage super-junction (SJ) MOSFET family that is utilizing charge balance technology for outstanding low on-resistance and lower gate charge performance. This advanced technology is tailored to minimize conduction loss, provide superior switching performance, and withstand extreme dv/dt rate. Consequently, SUPERFET III MOSFET Easy drive series helps manage EMI issues and allows for easier design implementation.

Features

- 700 V @ $T_J = 150\text{ }^{\circ}\text{C}$
- Low Effective Output Capacitance (Typ. $C_{oss}(eff.) = 439\text{ pF}$)
- Ultra Low Gate Charge (Typ. $Q_g = 46\text{ nC}$)
- Optimized Capacitance
- 100% Avalanche Tested
- RoHS Compliant
- Typ. $R_{DS(on)} = 105\text{ m}\Omega$
- Internal Gate Resistance: 0.5 Ω

Benefits

- Higher system reliability at low temperature operation
- Low switching loss
- Low switching loss
- Lower peak Vds and lower Vgs oscillation

Applications

- Telecommunication
- Cloud system
- Industrial

End Products

- Telecom power
- Server power
- EV charger
- Solar / UPS

Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Channel Polarity	Configuration	$V_{DSS}^{(BR)}$ Min (V)	V_{GS}^{Max} (V)	$V_{GS}^{(th)}$ Max (V)	I_D^{Max} (A)	P_D^{Max} (W)	$R_{DS(on)}^{n)}$ Max @ $V_{GS} = 2.5\text{ V}$ (m Ω)	$R_{DS(on)}^{n)}$ Max @ $V_{GS} = 4.5\text{ V}$ (m Ω)	$R_{DS(on)}^{n)}$ Max @ $V_{GS} = 10\text{ V}$ (m Ω)	Q_g^{Typ} @ $V_{GS} = 4.5\text{ V}$ (nC)	Q_g^{Typ} @ $V_{GS} = 10\text{ V}$ (nC)	C_{iss}^{Typ} (pF)	Package Type
FCP125N65S3R0	1.15	Pb-free Halide free non AEC-Q and PPAP	Active	N-Channel	Single	650	30	4.5	24	181	-	-	125	-	46	1940	TO-220-3

For more information please contact your local sales support at www.onsemi.com.

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